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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,689

12/04/2003

Hidetaka Ohazama

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EXAMINER

NGUYEN, DILINH P

ART UNIT

PAPER NUMBER

2814

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/726,689

Applicant(s)

OHAZAMA, HIDETAKA

Examiner

DiLinh Nguyen

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2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-10,13,14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,14 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-2 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Naoyuki et al. (JP 11-017056).

- Regarding claims 1-2 and 13, Naoyuki et al. disclose an interconnection structure of conductive wirings 4-5 for interconnecting a pair of interconnection objects 3 and 8, in which the conductive wirings 4-5 are disposed on the interconnection objects 3 and 8, respectively, comprising:

interconnection portions formed of conductive wiring patterns 4-5 on a surface of each supporting body of the interconnection objects 3 and 8, the interconnection portions being provided with gaps between adjacent ones;

an anisotropic conductive film 9 containing conductive particles therein, the film being interposed between the interconnection portions disposed on the respective interconnection objects 3 and 8; and

an accumulating space formed in the supporting body of the interconnection object 8 and preventing an over-density of the conductive particles flown out from the interconnection portions to the gaps due to the thermocompression bonding from occurring, wherein the accumulating space comprises a concave portion or a hole portion formed in at least one of the supporting body of the interconnection object 8 (fig. 2b, abstract).

3. Claims 1-2, 5-6 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kishimoto et al. (U.S. Pub. 2003/0136578).

- Regarding claims 1 and 13, Kishimoto et al. disclose an interconnection structure of conductive wirings 7 and 31 for interconnecting a pair of interconnection objects 8 and 30 by a thermocompression bonding, in which the conductive wirings 7 and 31 are disposed on the interconnection objects 40 and 30, respectively, comprising:

interconnection portions formed of conductive wiring patterns 7 and 31 on a surface of each supporting body of the interconnection objects 8 and 30, the interconnection portions being provided with gaps between adjacent ones;

an anisotropic conductive film 5 containing conductive particles 4 therein, the film being interposed between the interconnection portions disposed on the respective interconnection objects 8 and 30; and

an accumulating space formed in the supporting body 30 and preventing an over-density of the conductive particles 4 flown out from the interconnection portions to the gaps due to the thermocompression bonding from occurring, wherein the accumulating

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space comprises a concave portion or a hole portion formed in at least one of the supporting body of the interconnection object 30 (fig. 3, paragraphs 0041-0044).

- Regarding claim 2, Kishimoto et al. disclose that the accumulating space comprises a concave portion or a hole portion formed in at least one of the supporting body of the interconnection object 30 (fig. 3).
- Regarding claim 5, Kishimoto et al. disclose that wherein one of the pair of interconnection object 30 is a wiring board (fig. 3, para. 0041).
- Regarding claim 6, Kishimoto et al. disclose that wherein another one of the pair of interconnection object 8 is an interconnection portion of a display panel board (fig. 3, para. 0044).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto et al. (U.S. Pub. 2003/0136578) in view of Applicant Admitted Prior Art (fig. 1).

Kishimoto et al. disclose a display panel board 8 having a substrate 30, and interconnection portions including conductive wiring patterns 7 and 31 formed on the substrate 30, in which the interconnection portions are connected with an

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interconnection object 40 via an anisotropic conductive film 5 by a thermocompression bonding, comprising:

a concave portion formed in the substrate 30;

wherein the concave portion receives conductive particles 4 flown out from the anisotropic conductive film 5 due to the thermocompression bonding (fig. 3, paragraphs 0041-0044).

Kishimoto et al. do not explicitly disclose that the display panel board is an organic EL display panel.

However, AAPA (fig. 1) disclose an organic EL display panel having a substrate 121, and interconnection portions including conductive wiring patterns formed on the substrate 121 (fig. 1, page 1, lines 21-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the panel board of Kishimoto et al. by an organic EL display panel because as taught by AAPA in order to provide a different application for the semiconductor device structure.

6. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoyuki et al. (JP. 11-017056) in view of Applicant Admitted Prior Art (fig. 1).

Naoyuki et al. substantially disclose all the limitations as claimed above except for one of the pair of interconnection object is a print wiring board or a TAB tape and another one of the pair of interconnection objects is an organic EL display panel.

However, AAPA (fig. 1) disclose one of a pair of interconnection object is a Tape Automated Bonding (TAB) tape and another one of the pair of interconnection objects is an organic EL display panel having a substrate (fig. 1, page 1, lines 21-24). Therefore,

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it would have been obvious to one having ordinary skill in the art at the time the invention was made to have one of the pair of interconnection object is a print wiring board or a TAB tape and another one of the pair of interconnection objects is an organic EL display panel as taught by AAPA into the device of Naoyuki et al. in order to provide a high flexibility of the interconnections for the semiconductor device structure.

***Claims Allowed***

Claims 10, 14 and 16 are allowed.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 5:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DLN



HOAI PHAM  
PRIMARY EXAMINER